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09/779,379	02/07/2001	Gordon P. Sharp	A0744/7003	7977

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EXAMINER

MASINICK, MICHAEL D

ART UNIT	PAPER NUMBER
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2125

18

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/779,379

Applicant(s)

SHARP ET AL.

Examiner

Michael D Masinick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8, 16-22, 31-44, 70-79, 81-83, 85-89, 97-115 and 118-121 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 16-22, 31-37, 39-44, 70-79, 81-83, 85-89, 97-99, 104-113 and 119-121 is/are rejected.
- 7) ☒ Claim(s) 38, 100-103, 114, 115 and 118 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12, 13.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term “download” is used by the claims to mean “send a control signal”, while the accepted meaning is “to accept a program or block of data.” The term is indefinite because the specification does not clearly redefine the term.
2. Examiner requests that the claims using this term be appropriately modified to reflect the sending of control signals or parameters rather than using the confusing term “downloading” as computers “send” and “receive” commands, they do not “download” commands.
3. Claims 104-106 recites the limitation "the building location". There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 8, 34, 37, 40, 41, and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,068,798 to Heath et al.
3. Regarding claims 1 and 34, Heath shows an air monitoring system, comprising: an air monitoring unit including at least one sensor for acquiring air quality parameter data (Col 2, lines 18-28); and a computer having including an expert system for controlling the air monitoring unit based at least in part on the acquired air quality data (Col 5, lines 55-65).
4. Regarding claim 2, Heath shows wherein the expert system is adapted to analyze data from the air monitoring unit based at least in part on the acquired air quality data (Col 2, lines 18-28).
5. Regarding claim 4, Heath shows wherein the expert system is adapted to configure a test to be performed by the air monitoring unit including the location of the test and the time duration for the test (Col 8, lines 7-16).
6. Regarding claims 8, 40, and 41, Heath shows wherein the air monitoring unit includes a program for acquiring the air quality parameter data and the expert system is adapted to modifying the program (Col 7, lines 37-66).
7. Regarding claim 37, Heath shows wherein said means for analyzing the acquired air quality data further comprises means for analyzing information representative of the selected indoor location in reaching said conclusion (Col 7, lines 37-66).
8. Regarding claim 44, Heath shows wherein said air monitoring system comprises an installed system for monitoring air quality in multiple indoor locations (abstract).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3, 7, 16-22, 31, 33, 35, 36, 42, 70-74, 76, 77, 97-99, 120 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,068,798 to Heath et al in view of U.S. Patent No. 5,468,968 to Bailey et al.

11. The Heath Patent, as used above, shows an air quality control unit with a remote computer which can "download" information to the air quality control system. Heath does not show a remote data center including a database for storing the air quality parameter data and receiving inputted characteristics, and an expert system interactive with the air quality parameter data for analysis of the data in relation to certain inputted characteristics (Though the analyzer in Heath could be considered an Expert System, the Bailey reference below provides a better example).

12. Bailey et al shows a remote data center including a database for storing the air quality parameter data and receiving inputted characteristics (Col 3, lines 4-9), and an expert system interactive with the air quality parameter data for analysis of the data in relation to certain inputted characteristics (Claim 1, part D).

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13. It would have been obvious to one of ordinary skill in the art to use the data center, database storage capabilities, and expert analysis system of Bailey in the air quality and control system of Heath because these data processing units “make the process environment monitor a fully integrated system”.

14. Referring to claim 3, 7, and 17, Heath shows wherein the expert system generates the information, and is adapted to download the information to the air monitoring unit (Column 5, lines 55-65).

15. Referring to claim 18, Heath shows wherein the expert system is adapted to download information to the air monitoring unit to command the air monitoring unit to take a sample (Column 5, lines 55-65). Examiner notes that a grab sample is just a sample for a set period of time. Since the sampler alone would not automatically take samples, it must receive this information from some computer source.

16. Examiner also notes that the Bailey reference more clearly shows that these samples can be “grab” samples (Col 2, lines 32-37).

17. Referring to claim 19, Heath shows wherein the air monitoring unit includes operational parameters, and the expert system is adapted to download information to the unit to change the operational parameters (Col 5, line 5 – Col 6, line 39).

18. Referring to claim 20, Heath shows wherein the air monitoring unit includes a program to instruct the air monitoring unit in measuring air quality parameter data, and the expert system is adapted to download information to the air monitoring unit to change the program (Col 7, lines 37-66).

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19. Referring to claim 21, Heath shows wherein the air monitoring unit includes a set-up parameter, and the expert system is adapted to change the set-up parameter in the air monitoring unit (Col 8, lines 7-15).

20. Referring to claim 22, Heath shows wherein the communications link includes the Internet (Modem communications to "central office" in column 9). Examiner notes that Modems are used today (when the current application was invented) almost solely as a way to connect to an Internet, so this would have been an obvious use of the Model technology available in Heath.

21. Referring to claim 31 and 70, Heath shows an air monitoring system, comprising: a remote control unit for controlling the air monitoring unit; and a communications link between the control center and the air monitoring unit which can send controlling commands (shown above).

22. Heath does not show an air monitoring unit including a grab sampler contained within the air monitoring unit for acquiring an air sample; wherein the control unit is adapted to use a grab sampler to acquire an air sample.

23. Bailey shows an air monitoring unit including a grab sampler contained within the air monitoring unit for acquiring an air sample; wherein the control unit is adapted to use a grab sampler to acquire an air sample (Col 2, lines 32-37).

24. Referring to claim 33, Heath shows wherein the grab sampler includes a container for holding a sample of air ("Sample Test Chamber" - Abstract).

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25. Regarding claims 35 and 36, the location of the computer system has no bearing on the operation of the air quality monitoring system. While Heath shows a computer that is remote from the system, it could just as easily be placed "in proximity" to the air sampler. This is a design choice of the system engineer.

26. Regarding claims 42, Heath shows wherein said air monitoring system further comprises an air sampling device and wherein said expert system (Bailey) includes means for issuing a command to said air sampling device to acquire an air sample in response to the acquired sensor data meeting a predetermined criteria (Col 2, lines 18-28).

27. Regarding claims 71 and 72, the location of the computer system has no bearing on the operation of the air quality monitoring system. While Heath shows a computer that is remote from the system, it could just as easily be placed "in proximity" to the air sampler. This is a design choice of the system engineer.

28. Referring to claim 73, 97 and 98, Heath shows wherein the communications link includes the Internet (Modem communications to "central office" in column 9). Examiner notes that Modems are used today (when the current application was invented) almost solely as a way to connect to an Internet or intranet, so this would have been an obvious use of the Modem technology available in Heath.

29. Referring to claim 74, Bailey shows wherein said grab sample unit includes a filter unit for removing particles from the air sample (Abstract, part C).

30. Referring to claim 76, Bailey shows wherein said grab sample unit is configured for acquiring multiple air samples in response to multiple grab sample commands from said control unit. This ability has been shown above, and could be repeated multiple times as necessary.



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31. Referring to claim 77, Bailey shows wherein said control unit comprises an expert system for analyzing the acquired sensor data and generating the grab sample command. Shown above.

32. Referring to claim 99, Bailey shows wherein the command from the remote control unit is initiated by manual control (keyboard input).

33. Referring to claim 120, Bailey shows wherein said acquired sensor data includes data from at least two sensors. Bailey shows multiple sensors.

34. Claims 5 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,068,798 to Heath et al in view of U.S. Patent No. 5,468,968 to Bailey et al as shown above and further in view of U.S. Patent No. 5,822,745 to Hekmatpour.

35. With reference to what has been shown above, Heath in view of Bailey does not show wherein the expert system is adapted to provide a recommendation for improving the air quality parameter data.

36. Hekmatpour shows an expert system using a hierarchical database system for creating recommendations based upon input data.

37. It would have been obvious to one of ordinary skill in the art at the time of invention to use the expert recommendation system of Hekmatpour as a recommendation engine of Heath in view of Bailey because a computer recommendation leads to quicker human response which in turn leads to higher productivity rates.

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38. Claims 32, 75, and 119 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,068,798 to Heath et al in view of U.S. Patent No. 5,468,968 to Bailey et al as shown above and further in view of U.S. Patent No. 5,000,052 to Sipin.

39. Heath in view of Bailey does not show the use of a sorbent tube.

40. Sipin shows the use of a sorbent tube to collect air quality samples. This collection method is well known in the art.

41. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the sorbent tubes of Sipin as the collection means of Heath in view of Bailey because Sorbent tubes are known for their ability to "trap vapors and gases for future analysis".

42. Regarding claim 119, Bailey shows the use of a particle sensor.

43. Claims 6, 43, 78, 79, 81, 83, 85, 87, and 121 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,068,798 to Heath et al in view of U.S. Patent No. 5,468,968 to Bailey et al as shown above and further in view of U.S. Patent No. 6,111,501 to Honeyager et al.

44. With reference to what has been shown above, Heath in view of Bailey does not specifically show a housing; a plurality of easily removable air quality sensors mounted in said housing; and a programmable control unit having an interface to said air quality sensors, wherein said control unit is programmable so as to customize the air quality monitoring unit for operation with different sensors, and a manifold for transporting air from an inlet to said air quality sensors.

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45. Honeyager shows a housing (Figure 1); a plurality of easily removable air quality sensors mounted in said housing (sensor modules); and a programmable control unit having an interface to said air quality sensors (CPU system), wherein said control unit is programmable so as to customize the air quality monitoring unit for operation with different sensors (Col 5, lines 35-37), and a manifold for transporting air from an inlet to said air quality sensors (Figure 1).

46. It would have been obvious to one of ordinary skill to take the sensor housing and sensor operation system of Honeyager to use in the Air monitoring system of Heath in view of Bailey because the portability of the system provides the ability to move the unit around wherever it may be needed.

47. Regarding claim 79, Honeyager shows wherein each of said air quality sensors is mounted on a sensor card plugged into a card cage in said housing (removable modules).

48. Regarding claim 81, Honeyager shows at least one sensor located in said manifold near said inlet for sensing a parameter that changes rapidly (Figure 1).

49. Regarding claim 83, Baily shows a grab sample unit for acquiring an air sample in response to a grab sample command from said control unit.

50. Regarding claim 85, Honeyager shows wherein said housing is readily movable to different monitoring locations (portable - abstract).

51. Regarding claim 87, Honeyager shows a sensor interface card coupled between said quality sensors and said control unit (removable modules).

52. Regarding claim 121, Honeyager shows a multitude of sensors for a variety of purposes. They can be fastened in a "easily" or "heavily" secured manner without affecting the system of claim 70.

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53. Claims 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,068,798 to Heath et al in view of U.S. Patent No. 5,468,968 to Bailey et al as shown above and further in view of U.S. Patent No. 6,111,501 to Honeyager et al as shown above and further in view of U.S. Patent No. 5,307,667 to Caron.

54. Heath, Bailey and Honeyager do not show a vacuum pump.

55. Caron shows a vacuum pump for drawing air through said inlet to said plurality of air quality sensors (figure 1, abstract).

56. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the vacuum pump system of Caron in the portable air quality system of Heath, Bailey, and Honeyager because a vacuum pump provides a purer quality of air to the sensors which results in better readings.

57. Claim 86 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,068,798 to Heath et al in view of U.S. Patent No. 5,468,968 to Bailey et al as shown above and further in view of U.S. Patent No. 6,111,501 to Honeyager et al as shown above and further in view of U.S. Patent No. 6,085,576 to Sunshine et al.

58. Heath, Bailey and Honeyager do not show a GPS location system.

59. Sunshine shows a GPS system for providing location information to the control unit.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the GSP location system of Sunshine in the portable air quality system of Heath, Bailey,

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and Honeyager because GPS systems can provide needed information on a much faster basis than human data entry, resulting in increased productivity.

60. Claims 88 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,068,798 to Heath et al in view of U.S. Patent No. 6,275,942 to Bernhard et al.

61. With reference to what has been shown above, Heath does not show wherein the expert system is used at least in part to detect anomalies in the air monitoring unit or to detect data that is tampered or faulty.

62. Bernhard shows a simple method of using an expert system to discover faulty, tampered, or otherwise problematic data (Col 1, line 53 – Col 2, line 34).

63. It would have been obvious to one of ordinary skill to use the data analysis system of Bernhard in the air quality monitoring system of Heath because bad data can be problematic to the operation of any computer control system.

64. Claims 107-113 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,068,798 to Heath et al in view of U.S. Patent No. 5,908,383 to Brynjestad.

65. Heath does not show an expert system which can accept feedback, where data mining is used, which uses rule based, case based, fuzzy logic, or pattern recognition methods or where a combination of two or more of these systems.

66. Brynjestad shows a knowledge based expert system which uses many different methods in order to come up with the best solution. All of the above methods are included in Brynjestad.

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67. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the expert system methods of Brynjestad in the expert system of Heath because better problem solutions will be able to be seen at a quicker pace.

***Allowable Subject Matter***

68. Claims 38, 100-103, 114, 115, 118 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D Masinick whose telephone number is (703) 305-7738. The examiner can normally be reached on Mon-Fri, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (703) 308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MDM

A handwritten signature in black ink, appearing to read "L. P. Picard", written in a cursive style.

LEO PICARD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100